

forming a third insulating film on said second insulating film, said third insulating film being made of a material different from that of the second insulating film having a thickness larger than that of the second insulating film;

forming a groove in a region of said third insulating film, in which a wiring is to be formed, said groove having a bottom to which said second insulating film is exposed;

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removing a part of that portion of the second insulating film which is exposed to the groove, and a part of the first insulating film under the portion of the second insulating film, using the same etching mask covering said third insulating film and another part of said portion of the second insulating film which is exposed to the groove, and thus forming a contact hole reaching to the semiconductor substrate; and

burying the groove and the contact hole with copper to form a copper wiring in said groove and a copper contact in said contact hole, and controlling said burying with said copper to avoid formation of a native oxide.

40. (Twice Amended) A process of fabricating a semiconductor device comprising the steps of:

forming a first insulating film on a semiconductor substrate;

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forming a second insulating film on said first insulating film, said second insulating film being made of a material different from that of the first insulating film and having a thickness smaller than that of the first insulating film;

forming a third insulating film on said second insulating film, said third insulating film being made of a material different from that of the second insulating film and having a thickness larger than that of the second insulating film;

forming a groove in said third insulating film having a bottom comprising said second insulating film; and

forming copper in said groove, wherein forming said copper is controlled to avoid formation of a native oxide;

wherein said step of forming said groove comprises, using the same mask:

etching through said second insulating film to expose said first insulating film while leaving a remaining second portion of said second insulating film; and

removing a third portion of said first insulating film to expose said substrate while leaving a remaining fourth portion of said first insulating film, and

wherein said mask is formed on third insulating film said second portion of said second insulating film.

REMARKS

Favorable reconsideration of this application is respectfully requested.

This substitute amendment is submitted to replace the response filed December 2, 2002 as the last paragraph of claim 29 was inadvertently omitted from the marked-up copy in the December 2 response. The amendments and remarks are otherwise the same as in the December 2 response.

Claims 29-33 and 35-40 are pending in this application. Under 35 USC §103(a), claims 29-33, 36 and 37 stand rejected over US 4,789,648 (Chow et al.) in view of US 5,612,254 (Mu et al.) and US 5,478,780 (Koerner et al.), claims 35, 38 and 39 stand rejected over Chow et al. in view of Mu et al. and Koerner et al. and further in view of US 5,272,117 (Roth et al.), and claim 40 stands rejected over Chow et al. in view of Koerner et al.

It is noted that the word "second" was inadvertently omitted from line 15 of claim 40 in the prior amendment. It has been included in the present amendment. Also, "insulation" has been changed to --insulating-- for consistency. These changes are for clarification only and do not change the scope of claim 40.